

# THE EFFECTIVENESS OF TEACHING READING COMPREHENSION BY USING VENN DIAGRAMS TECHNIQUE

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**Abstrak:** Penelitian ini bertujuan untuk mengetahui ke-efektifitas-an mengajarkan membaca dan memahami teks report dengan menggunakan teknik Venn diagram di kelas XI SMA Negeri 4 Pontianak tahun ajaran 2014/2015. Teknik ini mengkombinasikan antara pelajaran bahasa Inggris dan Matematika. Metode penelitian yang digunakan adalah pre-eksperimen dengan total jumlah 36 siswa sebagai sampel penelitian. Hasil dari analisis penelitian menunjukkan bahwa rata-rata nilai *pre-test* siswa meningkat dari 70.44 menjadi 83.61 pada nilai *post-test* akhir. Hasil analisis dari t-test menunjukkan bahwa mengajarkan membaca dan memahami teks report dengan menggunakan teknik Venn diagram dapat meningkatkan kemampuan belajar siswa. Hasil dari *effect size* juga membuktikan bahwa teknik Venn diagram di kategorikan sebagai sangat efektif dan berhasil dalam meningkatkan pencapaian siswa dalam memahami teks report.

**Kata kunci:** Membaca, Pemahaman, Venn diagram

**Abstract:** This research aimed to test the effectiveness of teaching reading comprehension of report text by using Venn diagrams technique on the second grade students of SMA Negeri 4 Pontianak in academic year 2014/2015. This technique combined between English language and Math subject. The methodology of this research is a pre-experimental research with total 36 numbers of students as the sample of research. The result of analysis on this research showed that the mean score of pre-test improved from 70.44 to 83.61 in the post-test. The result of t-test showed that teaching reading comprehension of report text by using Venn diagram technique can improve students' ability in learning. The result of analysis on effect size also proved that Venn diagram technique categorized as highly effective and succeeded to improve students' achievement in comprehend the report text.

**Keywords:** Reading, Comprehension, Venn diagrams

Reading is an important skill for the students to gain the knowledge and information from the written text. In reading, students are expected to get the knowledge about what has been explained in the text, whereas in reading comprehension students also expected to used their skill to process the

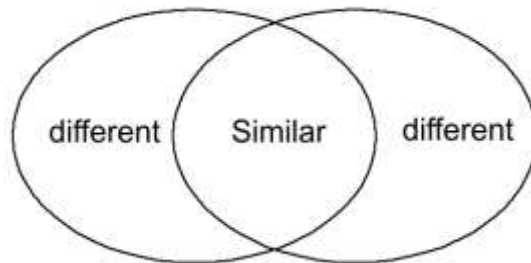
information to become a fluent reader. In fact, reading comprehension is not as easy as people think. It is not easy to have the ability of drawing the meaning from the printed page and then interpret the information appropriately.

In reading comprehension there are three important elements, they are the *reader* who is doing the comprehending; the *text* that is to be comprehended; and the *activity* in which comprehension is a part.” These three dimensions define a phenomenon that occurs in a *socio-cultural context* (Snow, 2002). In considering the reader, we include all the capacities, abilities, knowledge, and experiences that the students bring to the act of reading. The text includes any printed text or electronic text. In activity, it includes the purposes, processes, and consequences associated with the act of reading. As a reader, you need to be able to identify that main idea and distinguish between the main idea and its support (Chesla, 2000). In this case, the teacher plays an important role to help the students. They can teach reading comprehension in various ways, so the students can be attractive to learn and easily achieve the knowledge. This is one of another factor which can affect on students learning process.

Teaching reading comprehension is not only engaged with students’ ability that the teacher should be aware of, but it is also about teaching strategy that teachers used to teach in the classroom. In teaching reading, especially to comprehend the text, there are three important factors in the effective teaching reading comprehension; they are vocabulary, text comprehension, and teaching strategy for reading comprehension (Kamil et al, 2000). The result of researcher’s observation on the second grade students of SMA Negeri 4 Pontianak showed that the students are lack of appropriate technique for reading comprehension, even though they have been taught about reading since in the primary school. Teachers can use combinations of different methods to be effective in teaching text comprehension, and one of them is a graphic organizer (Pang et al, 2003). It is supported by Kamil et al (2000) which is said that “graphic organizer is effective to improve readers’ memory and comprehension for text”. Another expert also said that “the use of a variety of visual aids, including pictures, diagrams, and charts, helps all students—and especially ELL students—easily recognize essential information and its relationship to supporting ideas” (Bongolan & Moir, 2005).

One of the simplest graphic organizers that can be applied in the classroom is the Venn diagrams. By using Venn diagrams, the teacher can evaluate students’ comprehension of comparing or contrasting between two items. This graphic organizer consists of overlapping circles that show similarities and differences properties of two or more categories. Furthermore,

they are now used across many other disciplines, not only in math subject. The Venn diagrams can be seen as follows:



**Picture of Venn Diagrams**

From the figure above, the “different” region on the left side of circle consist all of the specifications from the first item. The “different” region on the right side of the circle consist all of the specifications from the second item. Furthermore, the “similar” side in the intersection between the first item and the second item will be the similarities specification both of them.

By using this technique, the students will learn about how to compare and contrast two different ideas from a text. The Venn diagram allows students to help structure the way they “think” about the similarities and differences between concepts (Zygouris-Coe et al, 2004). The combination of math and language of course sounds like quite new for some people. To avoid the ambiguity in teaching and learning the material, the teachers are expected to be able to introduce the concept of Venn diagrams itself to the students. So they would not misunderstand when using this technique in reading comprehension. Another positive aspect of using Venn diagrams is “they lend themselves to individual, small group, and classroom interactions” (Russell, 2013). It means that students can be more interactive in the activity because they can explore their knowledge while they are involved in group discussion.

In Venn diagrams technique, the way student “think” about the similarities and differences between concepts can be seen in level of comprehension such as literal comprehension, reorganization and inference. It is stated by Marzano which said that teacher can see the level of students’ comprehension by directly asking the similarities and differences (*literal comprehension*), and by encouraging variation and broadening understanding (*reorganization and inference comprehension*). Based on the explanation above, the researcher conduct a research to find out whether or not this technique is

effective in teaching reading comprehension, and to find out how effective this technique in teaching reading comprehension is. The indicator to show the effectiveness of this technique is showed by the result of t-test, the effect size, and also students' mean score of pre-test and post-test.

## METHODOLOGY

The methodology of this research is a pre-experimental research. Pre experiments are designed to measure the effect of treatment by using pre-test and post-test in one group as the sample from the wider population. The formula can be seen as follows:

$$O_1 \times O_2$$

(Cohen et al 2000 : 213)

Where :

$O_1$  = pre-test for the sample of experimental group

X = treatment

$O_2$  = post-test for the sample of experimental group

The population that the researcher used in this research is the whole second grade senior high school students in MIA class at SMAN 4 Pontianak. There are total 185 numbers of student, and 36 students in MIA 2 as the sample. The researcher used cluster sampling in probability sampling technique to select a specific class and test all the students in those selected class.

The instrument of this research is a multiple choices question which constructed by using table of specification based on the theory in the literature review. The instrument was validated by the English teacher whose teaching English language on that school and by tested those test items in tried out test to analyze the level of difficulty, the discriminating power, and the reliability of the test items. The result of analysis for the level of difficulty and the discriminating power showed that there are 20 test items left as the valid test item, while the rest of it has been eliminated due to the lack of qualification for both the level of difficulty and the discriminating power.

The result of reliability computation showed that the reliability coefficient of the test is 0.98 and categorized as high to very high. Therefore, it

is showed that the test item is valid and reliable to be used for collecting the data. The table of specification for the valid test item can be seen as follows:

| <b>Table of Specification</b> |                               |                         |              |
|-------------------------------|-------------------------------|-------------------------|--------------|
| <b>Component of Reading</b>   | <b>Level of Comprehension</b> | <b>Items Number</b>     | <b>Total</b> |
| Main Idea                     | Reorganization                | 1, 10                   | 2            |
| Supporting Idea               | Literal                       | 2, 4, 11, 13, 14        | 5            |
|                               | Reorganization                | 3, 8, 9, 17, 18, 19, 20 | 7            |
|                               | Inference                     | 5, 6, 7, 12, 15, 16     | 6            |
| <b>Total Test Item</b>        |                               |                         | <b>20</b>    |

In obtaining the data, this research is conducted in three steps. The first step is provides the multiple choices question as the pre-test to the students. It is to investigate the ability of students in reading report text. The second step is the researcher conducts the treatment, which is teaching report text by using Venn diagram technique. In order to make a good use of Venn diagrams technique, the researcher provides following steps:

1. The teacher teaches the students about the purpose, the generic structure and also the way to comprehend the text (by finding the main idea and the supporting idea).
2. The teacher introduces and explains some terms used in this technique, such as similarities and differences.
3. The teacher provides an example of how to use the technique.
4. The teacher will divide the class into small groups and provide a reading text about Scientific Report Text with two different topics.
5. In pair, the students make a list of each specification based on the text.

The last step in conducting this research is provides the post-test with the same question with the pre-test. The purpose of this post-test is to investigate the effectiveness of Venn diagram technique in teaching reading process.

In analyzing the data, the researcher used several techniques and formulas to analyze it.

- a. To know the significance of the treatment, the researcher use t-test formula. The formula can be seen as follows:

$$t = \frac{\bar{D}}{\sqrt{\frac{\sum D^2}{N(N-1)}}}$$

(Adapted from Norman, 2001)

Where :

t = t-test

$\bar{D}$  = the mean of students' different score

$\sum D^2$  = sum of students' different score of pre-test and post-test in square

N = number of students

- b. To know the effectiveness of the treatment, the researcher use effect size formula. The formula can be seen as follows:

$$ES = \frac{M_A - M_B}{S}$$

(Cohen, 1992)

Where :

ES = effect size

$M_A$  = students' mean score of post-test

$M_B$  = students' mean score of pre-test

S = standard deviation of pre-test and post-test

## RESEARCH FINDING AND DISCUSSION

### Research Finding

Research findings cover the result of data analysis of this research. This is to find out the significance improvement of the treatment to the students' ability, and to find out how effective the treatment is. Based on the data computation by using t-test formula, the result is 5.25. The computation can be seen as follows:

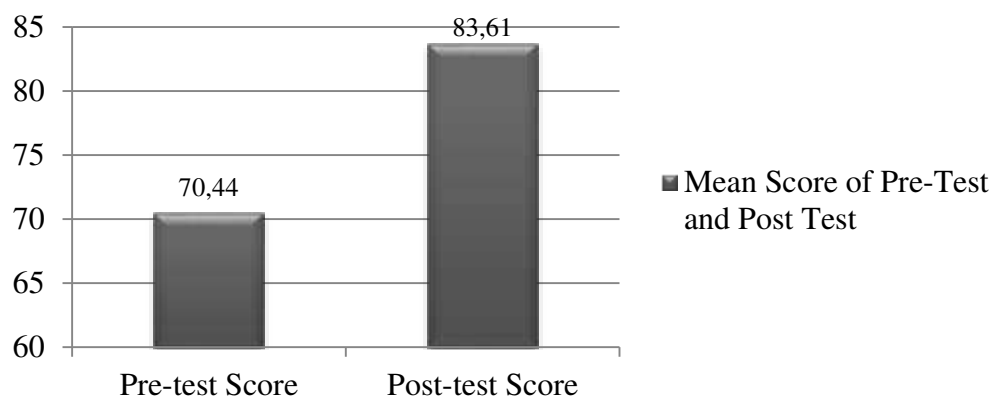
$$t = \frac{\bar{D}}{\sqrt{\frac{\sum D^2}{N(N-1)}}} = \frac{13,19}{\sqrt{\frac{7976}{36(36-1)}}} = \frac{13,19}{\sqrt{6.33}} = \frac{13,19}{2.51} = 5.25$$

The t-value was compared with the critical values for student's t-distribution in one tail probability ( $\alpha$ ) 0.05 and the number of freedom (N) 35. The result is 1.690, while the t-value from the computation is 5.25. It is showed that teaching reading comprehension of report text by using Venn diagrams technique improves students' ability.

The result of computation for effect size is 1.33, which is categorized as highly effective. It is showed that teaching reading comprehension of report text by using Venn diagram technique is highly effective and might become one of teaching techniques for the teachers in order to help their students in covers the reading comprehension. The computation can be seen as follows:

$$ES = \frac{M_A - M_B}{S} = \frac{83.61 - 70.44}{9.89} = \mathbf{1.33}$$

The significance improvement also showed by the different mean score of students' pre-test and post-test. The mean score of the pre-test which was administered before the treatment was 70.44. Meanwhile, the mean score of post-test is 83.61. The different score indicates that students' performance in post-test is better than in pre-test. From the chart below, it can be seen that students' performance in reading comprehension of report text is improved about 13.17 from the pre-test. The chart of different score for pre-test and post-test can be seen as follows:



**Diagram of Mean Score for Pre-Test and Post Test**

The expectation of the treatment is to concern on students' achievement from before the treatment and after the treatment. As the conclusion, teaching

reading comprehension of report text by using Venn diagrams technique is effective to improve students' ability in literal, reorganization and inference comprehension through group discussion. According to the data, it indicates that the Venn diagrams technique is a helpful technique in teaching reading comprehension of report text.

## **Discussion**

Since the computation in data analysis, the researcher finds out that it is very good to use this Venn diagrams technique in teaching reading comprehension of report text to the second grade students of SMA Negeri 4 Pontianak in academic year 2014/2015. They have average to good on literal, reorganization and inference comprehension. It can be seen from students' scores in the treatment which show the average of students score in 81, where the KKM of English Language subject in that school is 77 (for the computation, see appendix 6, page 61).

Furthermore, the theory which is said that this technique can encourage students to participate actively in group discussion which is stated by Russel (2013) is proven. It is because in Venn diagrams technique students use their interactive process --prior knowledge and prediction which are facilitate the processing of input from the text-- to comprehend the text and then they are involve in pair discussion to discuss the similarities and the differences between two texts which is discussing the literal, reorganization and inference of the text by using the Venn diagrams. Due to this technique combine between math and language, they interact actively during discussion session to know how math can work on language, how to use it, and how it can help them to solve the problem about the similarities and differences between two texts. They use their prior knowledge about how Venn diagrams works in math and then link it to the use of this technique to solve the problem.

The theory about Venn diagrams can help structure the way the students think which is stated by Zygouris-Coe et al (2004) is also proven. By using Venn diagrams technique the students can recognize the essential of the information and its relationship to the supporting idea so they can easily to locate the similarities and differences between the texts in form of graphic organizer to comprehend the whole text. This activity of course promotes their higher order thinking skill and effectively improves their memory and comprehension of the text.

Based on the result of this study, the writer assumes that there are some factors which can influence students' attitude towards learning English besides



the lack of appropriate technique for reading comprehension. According to Feng R & Chen H (2009) "Learning process is an emotional process. It is affected by different emotional factors." While the other experts said that "The inner feelings and emotions of learners influence their perspectives and their attitudes towards the target language." (Choy S.C & Troudi S, 2006). It can be concluded that the lack of appropriate technique for reading comprehension is not the only factor which is influence students' attitude towards learning reading comprehension. It may also affected by their emotional factors and inner feelings towards the target language.

## **CONCLUSION AND SUGGESTION**

### **Conclusion**

Based on the findings and discussion of this research, it indicate that teaching reading comprehension of report text by using Venn diagram technique is effective to the second grade students of SMA Negeri 4 Pontianak in academic year 2014/2015. Teaching reading comprehension of report text by using Venn diagrams technique also improves students' ability in reading comprehension. This Venn diagrams technique hopefully can be useful for both teacher and students on teaching learning activity, especially on reading comprehension.

### **Suggestion**

Related to the result of this research, the writer would like to give some suggestions as follows: (1) it is suggested to the English teacher to apply this technique by encouraging the students to discuss the similarities and the differences of two different topics in reading comprehension of report text by using Venn diagrams technique, (2) to explain the Venn diagrams technique in reading comprehension to avoid the misinterpretation because the Venn diagrams itself known as a branch of math subject, (3) while applying this technique, provide two different topics but still on the same theme. It is to avoid the ambiguity and may therefore cause confusion to the students, (4) it is valuable to investigate students' comprehension with multiple designs of reading test, for instance provide some WH questions test, True or False test, or ask the students to make a summary about the two different topics to know how far they are understand the texts after they use the Venn diagrams technique.

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